

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

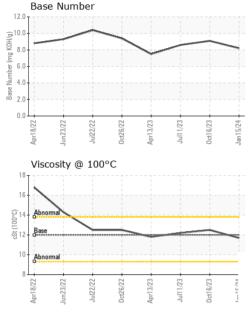
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

TS)		Apr2022 J	un2022 Jul2022 Oct20	22 Apr2023 Jul2023 Oct2023	Jan2024	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0113587	PCA0105780	PCA0100874
Sample Date		Client Info		15 Jan 2024	16 Oct 2023	11 Jul 2023
Machine Age	mls	Client Info		384426	379340	362543
Oil Age	mls	Client Info		5086	8263	8534
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	18	19	16
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	6	5
Lead	ppm	ASTM D5185m	>40	0	2	1
Copper	ppm	ASTM D5185m	>330	4	4	3
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	5	4	7
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	50	69	60	66
Manganese		ASTM D5185m ASTM D5185m	0	69 0	<1	<1
Manganese Magnesium	ppm	ASTM D5185m ASTM D5185m	0 950	69 0 1041	<1 929	<1 1005
Manganese Magnesium Calcium	ppm ppm	ASTM D5185m	0 950 1050	69 0 1041 1363	<1	<1
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995	69 0 1041 1363 1172	<1 929 1365 932	<1 1005 1262 1081
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995 1180	69 0 1041 1363 1172 1459	<1 929 1365 932 1278	<1 1005 1262 1081 1342
Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995	69 0 1041 1363 1172	<1 929 1365 932	<1 1005 1262 1081
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995 1180	69 0 1041 1363 1172 1459	<1 929 1365 932 1278	<1 1005 1262 1081 1342
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 950 1050 995 1180 2600	69 0 1041 1363 1172 1459 3945 current 4	<1 929 1365 932 1278 3274 history1 4	<1 1005 1262 1081 1342 3523 history2 4
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base >25	69 0 1041 1363 1172 1459 3945 <u>current</u> 4 6	<1 929 1365 932 1278 3274 history1 4 6	<1 1005 1262 1081 1342 3523 history2 4 6
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base >25 >20	69 0 1041 1363 1172 1459 3945 <u>current</u> 4 6 33	<1 929 1365 932 1278 3274 history1 4 6 25	<1 1005 1262 1081 1342 3523 history2 4 6 24
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base >25 >20	69 0 1041 1363 1172 1459 3945 current 4 6 333 current	<1 929 1365 932 1278 3274 history1 4 6 25 history1	<1 1005 1262 1081 1342 3523 history2 4 6 24 kistory2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	69 0 1041 1363 1172 1459 3945 <u>current</u> 4 6 33 33 <u>current</u> 0.8	<1 929 1365 932 1278 3274 history1 4 6 25 history1 1.1	<1 1005 1262 1081 1342 3523 history2 4 6 24 kistory2 0.9
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D51854	0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20	69 0 1041 1363 1172 1459 3945 <u>current</u> 4 6 33 <u>current</u> 0.8 10.4	<1 929 1365 932 1278 3274 history1 4 6 25 history1 1.1 12.2	<1 1005 1262 1081 1342 3523 history2 4 6 24 kistory2 0.9 12.0
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	69 0 1041 1363 1172 1459 3945 <u>current</u> 4 6 33 33 <u>current</u> 0.8	<1 929 1365 932 1278 3274 history1 4 6 25 history1 1.1	<1 1005 1262 1081 1342 3523 history2 4 6 24 kistory2 0.9
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D51854	0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20	69 0 1041 1363 1172 1459 3945 <u>current</u> 4 6 33 <u>current</u> 0.8 10.4	<1 929 1365 932 1278 3274 history1 4 6 25 history1 1.1 12.2	<1 1005 1262 1081 1342 3523 history2 4 6 24 kistory2 0.9 12.0
Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7615	0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20 >30	69 0 1041 1363 1172 1459 3945 <u>current</u> 4 6 33 33 <u>current</u> 0.8 10.4 19.7	<1 929 1365 932 1278 3274 history1 4 6 25 history1 1.1 12.2 22.0	<1 1005 1262 1081 1342 3523 history2 4 6 24 history2 0.9 12.0 20.9



OIL ANALYSIS REPORT





Certificate L2367

Laboratory

Sample No.

Contact/Location: ED DAVIS - MILLOG